



**EPA**

# Superfund At Work

## Hazardous Waste Cleanup Efforts Nationwide

### American Thermostat Site Profile

**Site Description:**

Former thermostat assembly plant in South Cairo, New York

**Site Size:** Approximately 8 acres

**Primary Contaminants:**

Volatile organic compounds (VOCs), other organic compounds, arsenic, chromium, and lead

**Potential Range of Health Risks Without EPA Cleanup:**

Liver, kidney, circulatory system, central nervous system damage; direct contact with contaminated soil, or ingestion of contaminated ground water could cause cancer

**Nearby Population Affected:**

5,000 within a 3-mile radius

**Ecological Concerns:**

Contamination of nearby Catskill Creek and a local pond

**Year Listed on NPL: 1983**

**EPA Region: II**

**State: New York**

**Congressional District: 2**

### *Success In Brief*

## EPA Mobilizes to Safeguard Community and Eliminate Chemical Waste

EPA's Superfund program decisively mitigated dangerously high levels of toxic chemicals at New York's American Thermostat Corporation (ATC) hazardous waste site. Superfund staff:

- Quickly sampled area drinking wells and treated over 10 million gallons of contaminated ground water;
- Used innovative technologies to reduce on-site soil and ground water contamination;
- Secured a permanent alternate water supply for affected residents; and
- Initiated a public outreach effort which gained support for cleanup activities.

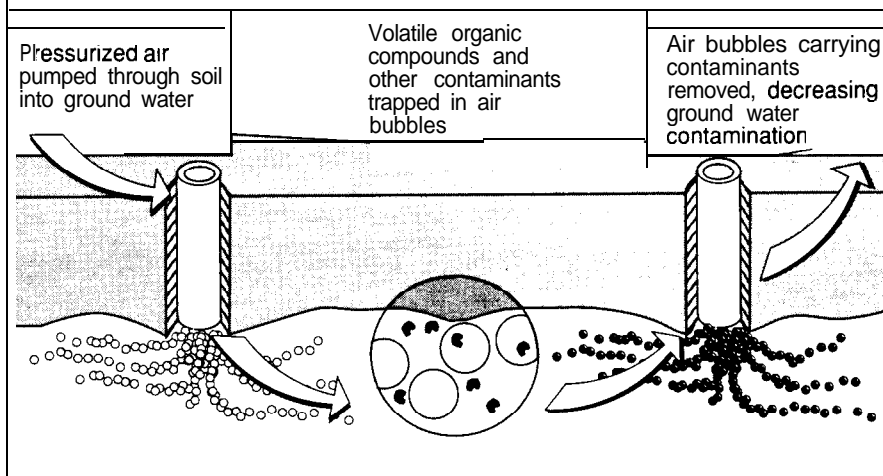
The American Thermostat site is a prime example of EPA's commitment to preserve the health and welfare of citizens and the environment.

### **The Site Today**

Cleanup has reduced the threat of exposure to site contaminants. Monitoring wells, carbon treatment units, vapor extraction and air

stripping systems have been installed. Over 10 million gallons of contaminated ground water have been treated. Volatile organic compound (VOC) levels have been reduced by over 80% in adjacent wells, and the ATC well shows a 90% decrease of VOCs. Cleanup construction is underway. Completion of the alternate water supply is scheduled for December 1992. Cleanup plans for polluted soil and sediments are currently being finalized, and should be officially released by October 1992.

### Innovative Air Stripping Technique for Ground Water



## A Site Snapshot

The American Thermostat Corporation (ATC) hazardous waste site is located in South

Cairo, New York.. The site borders a popular tourist and light residential area.

Private homes are located near the site's eastern and western boundaries, and approximately 5,000 people live within a three-mile radius of the site.

Operations in the former assembly plant took place in one large building; machine oils, lubricants, and solvents were utilized in the assembly process. Pollution from plant operations has been found in the soil, ground water, and another plant building.

Waste chemical sludges containing volatile organic compounds (VOCs) were disposed of

directly into abandoned septic systems and dumped on-site. As a result, ground water and

drinking water in the vicinity were contaminated.

Catskill Creek, which is classified as a trout stream and located less than one-quarter of a mile east of the site, was sampled in early 1980 but showed no evidence of contamination.

Eating, drinking or coming into direct contact with ground water or soil contaminated with VOCs could adversely affect the liver, kidneys, or central nervous system, and increases the risk of cancer.

**Pollutants are lubricants, machine oils, and solvents used in the American Thermostat plant**

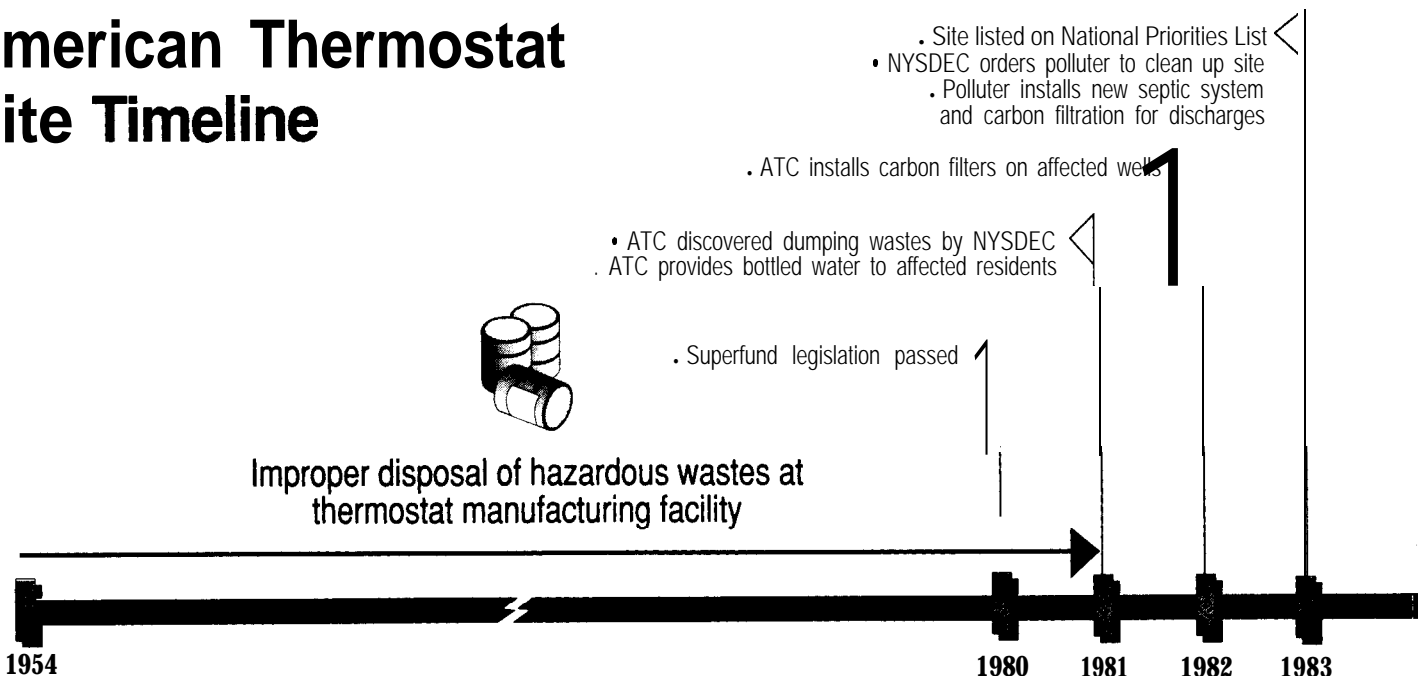
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### Improper Dumping Practices Led to Extensive Contamination

Between 1954 and 1985, ATC produced thermostats for small appliances at the South Cairo site. In March 1981, two ATC employees were observed dumping sludge and solvents onto the plant parking lot.

This triggered immediate investigations into the company's waste handling practices by the New York State Department of Environmental Conservation (NYSDEC) and the

## American Thermostat Site Timeline



# Thermostat Story:

## Ignorance Leads to Soil and Drinking Water Contamination

New York State Attorney General's Office. Findings revealed a high level of VOC contamination over approximately 16 million gallons of ground water on and near the site. Subsequently, water samples collected in five privately-owned wells in the ATC vicinity revealed high levels of VOCs.

The primary threat to area residents was in the water supply. Therefore, the local health department immediately advised

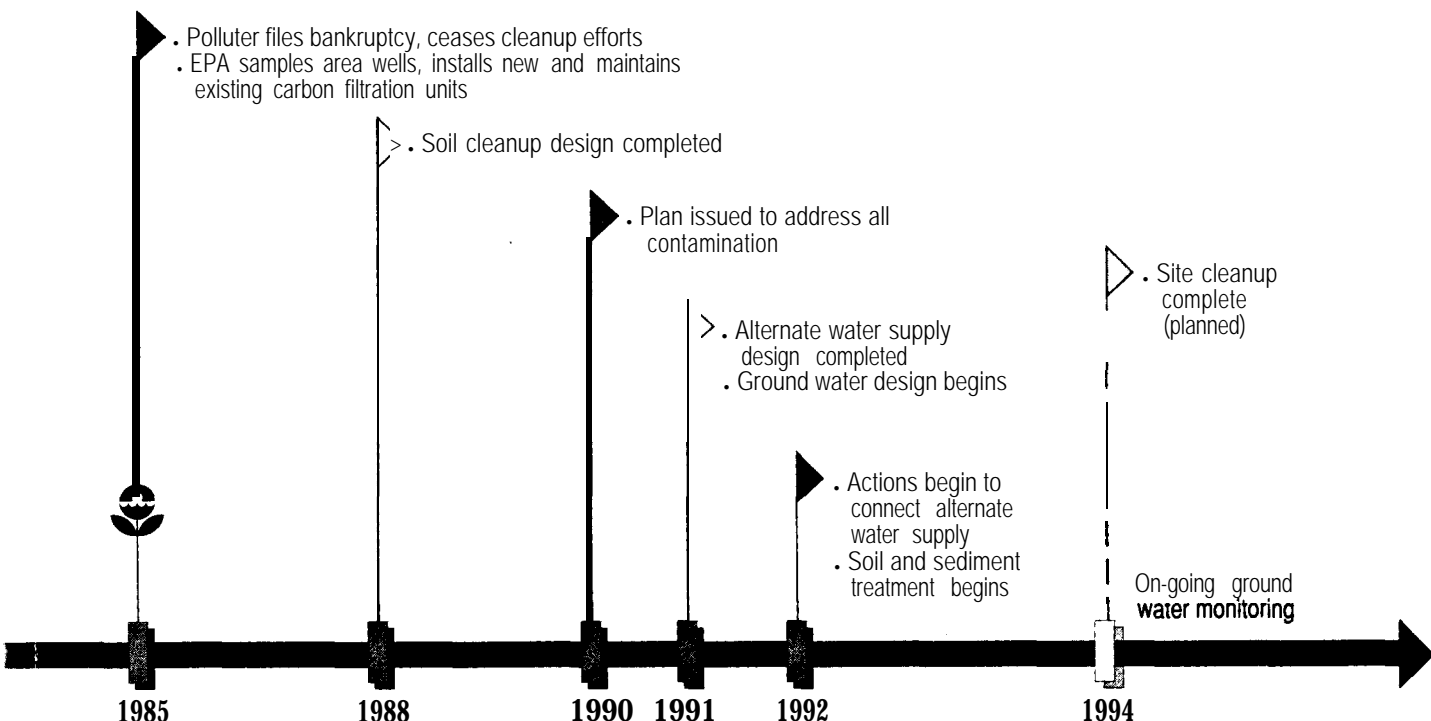
affected residents not to drink or cook with their well water. As a result, ATC began supplying bottled water

Observation of ATC employees dumping sludge and solvents on-site prompted an investigation revealing high-level contamination in the ground water

to local residents in April 1981. By late 1982, ATC had installed carbon filters on its own well and the affected residential wells. The polluters, ATC and AMRO Realty Corporation,

agreed under state orders to clean up the site and its surroundings, supply bottled water for cooking and drink-

ing purposes, and install, monitor, and maintain carbon filter systems for the five affected homes. In June 1983, ATC installed a new on-site 4,500 gallon septic system and, in September 1983, the company provided carbon filtration for septic system discharges to lower VOC levels. However, when ATC ceased operations and filed involuntary bankruptcy in May 1985, they also stopped providing bottled water and maintaining the carbon filter systems in the affected homes.



# EPA Protects Citizens and the Environment at American Thermostat Site

The site was listed on the National Priorities List (NPL) in September 1983. The NPL is EPA's list of the nation's worst abandoned hazardous waste sites eligible for cleanup under the Superfund program.

At the request of New York state, EPA took charge of the situation in June 1985 and

**Construction to permanently extend an alternate water supply to affected residences is scheduled to begin December 1992**

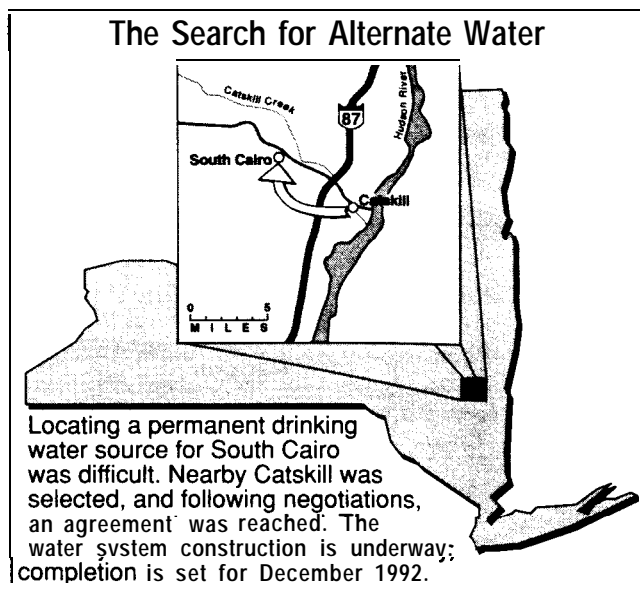
began sampling private wells on an ongoing basis. To reduce contamination levels in the water, EPA installed two new carbon filtration units on private wells, and began maintenance on previously installed units. Operation of the carbon units has reduced the potential for exposure to high concentrations of contaminants in resident wells.

EPA also installed an air stripping system on two highly contaminated wells. (See diagram on page 1.)

The innovative air stripping units were developed by an EPA specialist, and have been extremely successful in reducing the level of contaminants in the ground water. While cleaning the ground water, the air stripping system creates a barrier to prevent further migration of contaminants, and EPA continuously monitors these systems.

Despite these effective, short-term measures, it was evident that local residents required a permanent alternative drinking water source. Recognizing this, EPA formalized their plan in 1988 to permanently provide drinking water after receiving comments from local residents.

The plan called for an extension of the Village of Catskill's water district to approximately 43 affected properties. The Village owned the water supply and initially refused to supply the water, claiming the extra 43 residences would strain the water capacity.



In October 1991, following three years of complex negotiations with the Village of Catskill, interested local citizen groups and the New York state government, EPA and the Village finally signed an agreement for the extension of water lines. Design of the alternate water supply plan was completed in September 1991, and construction is scheduled for completion in December 1992.

## EPA Solicits Community support

In light of the initial skepticism residents expressed over the feasibility of connecting to the new water supply, EPA undertook a public outreach effort through letters, telephone calls, and public meetings to reflect public concerns and suggestions in the water extension plan. As a result, over 90% of the residents affected by the ground water contamination now support EPA's plan and have signed letters requesting that their homes be connected to the new water supply.

The extension of the water lines will provide a permanent and reliable source of water to residents, and prevent exposure to contaminated ground water.

## EPA Makes Commitment to Long-Term Cleanup

In June 1990, a separate plan was formally released to the public that involved the cleanup of all remaining contamination at the site. Specifically, the plan called for cleanup of the affected soil, ground water and pollution inside the assembly plant building. The most contaminated solid and waste materials were excavated and treated by heating them at low temperatures (400°C) until the wastes evaporated into gases. A vapor extraction system then collected the gases.

The on-site building is scheduled for decontamination via vacuuming and dusting of contaminated surfaces. Eighteen waste-oil drums stored in the building and contaminated with hazardous waste materials will receive off-site treatment and be disposed at an EPA-approved facility, along with sludge wastes from drain pits inside the building. The building cleanup plans were completed in September

1991; initial work began at that time.

Treatment of the ground water, however, will require a comprehensive management and maintenance program to ensure the effectiveness of the treatment system. The ground water will be treated using filtration, air strip-

American Thermostat site included treatment of soil, ground water and sediments.

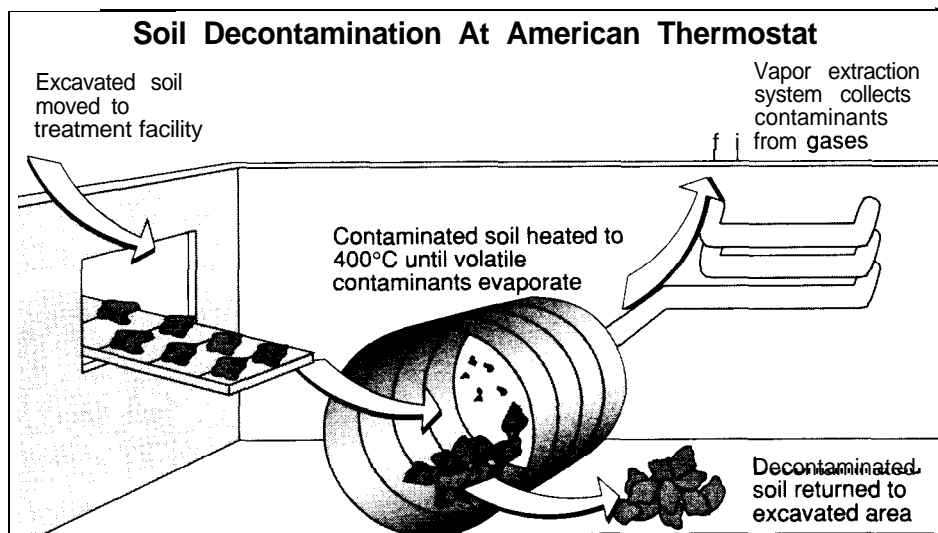
ping, and carbon absorption. Afterwards, the treated water will be re-injected on-site.

Ground water cleanup will begin in the summer of 1993. The scheduled ground water treatment period is estimated to last approximately 30 years. Ground water cleanup is estimated at \$26 million, including an annual operations and maintenance cost of \$1.3 million for 30 years.

Contaminated sediments from a residential pond adjacent to the site are scheduled to be excavated and treated concurrently with the soil. The treated soil and sediments will then be returned to the excavated areas, and the surface will be covered with clean soil. Any remaining contaminated soil or sediments that pose health risks will be disposed off-site at an EPA-approved facility.

Source control cleanup designs have been completed and implementation will begin by the end of 1992. Only treated soils and sediments with contaminants

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As knowledge about hazardous wastes has grown, the EPA has developed several methods for soil decontamination. Based on the type of contamination at the American Thermostat site, the soil was treated with a low-temperature heat to evaporate the volatile organic compounds.

# Commitment to Long-Term Cleanup

*continued from page 5*

well below established safety levels will be redeposited. After the soil and sediments are treated, extensive long-term management and monitoring will not be required. The total soil cleanup cost is \$3 million, with operations and maintenance costs of \$100,000 per year.

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# Success at American Thermostat

By promptly addressing the immediate threats to the public from contaminated drinking water, the Superfund program gained the confidence of citizens adversely affected by contamination at the hazardous waste site.

EPA was quick to respond to environmental concerns, and conducted comprehensive cleanup actions to mitigate imminent and potential threats. Public participation in

selecting cleanup remedies was encouraged, and over 90% of the community is satisfied with the new water supply plan.

EPA's efforts have been successful in decreasing the risk of soil and ground water contamination from volatile organic compounds. Although cleanup activities will continue until 1994, the potential for exposure to site contaminants for area residents has been largely eliminated.

For additional copies of this or other *Superfund At Work* updates, contact the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161, telephone (703) 487-4650.



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